

That Which Is Claim Is:

1. A medical device, comprising:
 - a hollow housing having a generally open rearward end forming a socket;
 - a fluid container containing a quantity of medicinal fluid, the fluid container being adapted to engage the socket;
 - a needle having a sharpened tip, wherein the needle is displaceable between a projecting position in which the sharpened tip projects forwardly from the housing and a retracted position wherein the sharpened tip is enclosed within the housing;
 - a biasing element biasing the needle toward the retracted position;
 - a needle retainer operable between a retaining position in which the needle retainer releasably retains the needle in the projecting position against the bias of the biasing element and an release position in which the needle is released allowing the biasing element to displace the needle rearwardly;
 - a lock for locking the needle in the retracted position to impede displacement of the needle after the needle is displaced into the retracted position; and
 - a guard covering the lock to prevent manipulation of the lock to release the needle;wherein upon forward displacement of the fluid container, the fluid container engages the needle retainer displacing the needle retainer from the locked position to the unlocked position.
2. The device of claim 1, wherein the needle retainer comprises a latch biased radially outwardly, releasably engaging the housing.
3. The device of claim 1 wherein the lock comprises a guide arm connected to the needle and biased radially outwardly from the needle into engagement with a channel in the interior wall of the housing,

wherein the engagement between the guide arm and the channel substantially prevents rotational displacement of the needle retainer in the housing.

4. The device of claim 3, wherein the lock comprises a window in the wall of the housing, and the guide arm is configured to engage the window when the needle is displaced to the retracted position.
5. The device of claim 4 wherein the guard circumscribes at least a portion of the housing to cover the window.
6. The device of claim 1, wherein the fluid container contacts the guard to substantially prevent separation of the fluid container from the housing.
7. A medical device, comprising:
 - a hollow housing having a rear socket;
 - a fluid container adapted to engage the socket on the housing, said container having an open rear end through which a medicinal fluid may be deposited while the fluid container engages the socket;
 - a needle having a sharpened tip, wherein the needle is displaceable between a projecting position in which the sharpened tip projects forwardly from the housing and a retracted position wherein the sharpened tip is enclosed within the housing;
 - a biasing element biasing the needle toward the retracted position;
 - a needle retainer operable between a locked position in which the needle retainer releasably retains the needle in the projecting position against the bias of the biasing element and an unlocked position in which the needle is released allowing the biasing element to displace the needle rearwardly; andwherein upon pushing forwardly upon the fluid container, after ejection

of the fluid the needle retainer is displaced from the locked position to the unlocked position.

8. The medical device of claim 7 further comprising a stopper configured to close the open rear end of the fluid container in a fluid tight seal.
9. A method of manufacturing a medical device, comprising the steps of:
fabricating a needle injector with a hollow body;
fabricating a fluid container having a sealed end and an open end;
connecting the sealed end of the fluid container to the hollow body of the needle injector;
sterilizing the needle injector and the fluid container while the fluid container is attached to the injector;
depositing a medicinal fluid into the fluid container through the open end of the fluid container; and
closing the open end of the fluid container to enclose the medicinal fluid in the fluid container.
providing an injector housing having a generally open rearward end;
inserting a needle having a sharpened tip into the housing so that the needle is releasably held in a projecting position with the sharpened tip projecting forwardly from the housing;
providing a fluid container having a pierceable seal and a generally open end;
inserting the fluid container into the rearward open end of the housing;
filling the fluid container with fluid through the open end of the fluid container while at least a portion of the fluid container is disposed within the housing; and
sealing the open end of the fluid contained after the fluid container is filled.
10. The method of claim 9 wherein the step of sealing comprises attaching a fixed seal to the fluid container.

11. The method of claim 9 comprising the step of inserting a spring into the housing to bias the needle is shielded to prevent inadvertent contact with the needle after use.
12. The method of claim 11 comprising the step of providing a needle retainer operable to hold the needle against the bias of the spring, wherein the needle retainer is cooperable with the fluid container to cause retraction of the needle.
13. The method of claim 9 wherein of sealing comprises inserting a seal into the rearward open end of the fluid container.
14. The method of claim 13 comprising the step of fixing the axial position of the seal in the rearward open end of the fluid container to impede axial displacement of the fixed seal.
15. The method of claim 9 comprising the step of sterilizing the housing and fluid container together after the step of inserting the fluid container into the housing.
16. The method of claim 15 wherein the step of sterilizing occurs prior to the step of filling.
17. A method for producing a medical device, comprising the steps of:
providing an injector having a retractable needle;
attaching a fluid container to the injector;
sterilizing the injector and attached fluid container; and
filling the fluid container with a medicinal fluid.
18. The method of claim 17 comprising the step of sealing the fluid container with a seal after the step of filling, wherein the seal is fixed in position relative to the fluid container.

19. The method of claim 17 wherein the step of providing an injector comprises providing an injector that is cooperable with the fluid container to automatically retract the needle after use.
20. The method of claim 17 wherein the step of filling after the step of sterilizing.
21. A medical device, comprising:
a hollow housing having a generally open rearward end forming a socket;
a fluid container containing a quantity of medicinal fluid, the fluid container being adapted to engage the socket;
a needle having a sharpened tip, wherein the needle is displaceable between a projecting position in which the sharpened tip projects forwardly from the housing and a retracted position wherein the sharpened tip is enclosed within the housing;
a biasing element biasing the needle toward the retracted position;
a needle retainer operable between a retaining position in which the needle retainer releasably retains the needle in the projecting position against the bias of the biasing element and an release position in which the needle is released allowing the biasing element to displace the needle rearwardly;
a lock for locking the needle in the retracted position to impede displacement of the needle after the needle is displace into the retracted position; and
a second lock for substantially permanently preventing separation of the fluid container from the housing;
wherein upon forward displacement of the fluid container, the fluid container engages the needle retainer displacing the needle retainer from the locked position to the unlocked position.
22. The device of claim 21, wherein the needle retainer comprises a latch

biased radially outwardly, releasably engaging the housing.

23. The device of claim 21 wherein the lock comprises a guide arm connected to the needle and biased radially outwardly from the needle into engagement with a channel in the interior wall of the housing, wherein the engagement between the guide arm and the channel substantially prevents rotational displacement of the needle retainer in the housing.
24. The device of claim 23, wherein the lock comprises a window in the wall of the housing, and the guide arm is configured to engage the window when the needle is displaced to the retracted position.
25. The device of claim 21 wherein the second lock permits displacement of the fluid container relative to the housing, while impeding separation of the fluid container from the housing.
26. The device of claim 21 wherein the second lock comprises a flange projecting radially inwardly into the socket of the housing.
27. The device of claim 21 wherein the second lock comprises a projection on the fluid container that projects radially outwardly.